Oh Twitter!

Strings
Announcement

- Please come to office hours!
Strings in Python

Lecture Notes modeled after: http://www.openbookproject.net/
http://www.pythontutor.com/index.html
What are some of the data types we’ve seen so far?
int, float, bool, str
Strings are made of smaller pieces: characters
The **String** is considered as a **compound** data type: that is, you can treat it as a single thing, or you can access its parts.
# The bracket operator: selects a single character from a string

fruit = "apple"

letter = fruit[0]
print letter

letter = fruit[1]
print letter

letter = fruit[2]
print letter
# Length of a string, indexing
fruit = "strawberry"
fruit_len = len(fruit)
print fruit_len
print fruit[0]
print fruit[fruit_len-1]
print fruit[-1]
print fruit[-2]

print fruit[fruit_len]
IndexError: string index out of range
String Traversal
fruit = "strawberry"

index = 0
while index < len(fruit):
    letter = fruit[index]
    print letter,
    index += 1
strawberry
fruit = "strawberry"

for char in fruit:
    print char,
strawberry
# create names for a group of ducks
prefixes = "JKLMNOPQ"
suffix = "ack"

for letter in prefixes:
    print letter + suffix
A substring of a string is called a **slice**.
# Select a slice
s = "Monday Tuesday and Wednesday"

print s[0:6]
print s[7:14]
print s[16:20]
fruit = "banana"
print fruit[0:3] #start at the beginning
print fruit[3:] #go to the end
print fruit[:]

alphabet="abcdef"
print alphabet[0:2]
print alphabet[:3]
print alphabet[2:]
print alphabet[:]
ban
ana
banana
ab
abc
cedef
abcedef
String Comparison
# Using == to compare strings
fruit = raw_input('Enter your favorite fruit: ')

if fruit == "peach":
    print "Yes, we like peach too!"
else:
    print "Your favorite fruit is", fruit
Enter your favorite fruit: peach
Yes, we like peach too!
# lexicographical order
fruit = raw_input('Enter your favorite fruit: ')

if fruit < "banana":
    print "Your fruit, " + fruit + ", comes before banana."
elif fruit > "banana":
    print "Your fruit, " + fruit + ", comes after banana."
else:
    print "Yes, we have no bananas!"
Enter your favorite fruit: apple
Your fruit, apple, comes before banana.
Strings are immutable: can’t change a character in the string
greeting = "Hello"
print greeting
greeting[0] = 'W'  # ERROR!
Hello

TypeError: 'str' object does not support item assignment
greeting = "Hello"
new_greeting = 'W' + ' ' + greeting
print greeting
print new_greeting
Hello
W Hello
The **in** operator tests if one string is a **substring** of another.
print 'p' in 'apple'
print 'i' in 'apple'
print 'ap' in 'apple'
print 'app' in 'apple'
print 'ab' in 'apple'
print 'a' in 'a'
print 'apple' in 'apple'
def remove_vowels(s):
    vowels = "aeiouAEIOU"
    s_without_vowels = ""
    for letter in s:
        if letter not in vowels:
            s_without_vowels += letter
    return s_without_vowels

user_input=raw_input('Please enter your word: ')
print remove_vowels(user_input)
Please enter your word: banana
bnn
#Eureka traversal: as soon as we find what we are looking for, we can cry Eureka! and stop looking

def find(string, ch):
    index = 0
    while index < len(string):
        if string[index] == ch:
            return index
        index += 1
    return -1

user_input=raw_input('please enter your word: 
print find(user_input, 'a')
please enter your word:banana
1
Counting in String
fruit = "banana"
count = 0
for char in fruit:
    if char == 'a':
        count += 1
print count
Coming Up Next: Analyzing Twitter Data
THANKS!

Any questions?

You can find me at
beiwang@sci.utah.edu

http://www.sci.utah.edu/~beiwang/teaching/cs1060.html
Special thanks to all the people who made and released these awesome resources for free:

- Presentation template by SlidesCarnival
- Photographs by Unsplash